

Application Number 10/807,072  
Responsive to Office Action mailed August 18, 2006

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### AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs [0006], [0026], [0030], [0035], [0037], and [0073] with the following amended paragraphs:

[0006] Radio frequency identification (RFID) tags include compensating elements. The function of the compensating element 30 becomes discernable when a compensated RFID tag is in the presence of a group of other RFID tags. The compensating element 30 increases the likelihood that the compensated RFID tag 20 will be detected by an RFID system, even when in close proximity to other RFID tags, whether the other RFID tags are similarly compensated, differently compensated, or uncompensated.

[0026] In addition, articles may be positioned in a number of storage areas 12, e.g., on an open shelf 12A, a cabinet 12B, a vertical file separator 12C (collectively, "storage areas 12") or a other location, as shown in FIG. 1. Each storage area 12 includes tag interrogation capability which enables tracking of articles throughout a facility. File folders in an office or medical setting, for example, could be tracked throughout the facility via storage areas 12. In a library setting, for example, a book could be tracked after check-in while on shelf 12A.

[0030] RFID system 10 may operate in a band of the electromagnetic spectrum defined by governmental regulations for electromagnetic radiation emissions. For example, RFID system 10 may operate at a common worldwide standard in the Industrial-Scientific-Medical (ISM) band centered at 13.56 MHz with an allowable frequency variance of +/- 7 kHz. However, other frequencies may be used for RFID applications, and the invention is not so limited. For example, some RFID systems in large storage areas such as a warehouse may use an RFID system that operates at approximately 900 MHz. It shall be understood that one skilled in the art could reasonably ~~reasonable~~ extend the operation of RFID system 10 to other frequencies, for example, inductive loop RFID antennas operating at frequencies other than 13.56 MHz in the HF band, and to other bands, e.g., the Low Frequency (LF) band at 125 kHz to 138 kHz.

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[0035] As mentioned above, each of the storage areas 12 of system 10 may be equipped with one or more reader antennas for interrogating the articles to aid in determining which articles are located at each of the storage areas. One example reader antenna which may be used is described in copending and commonly assigned U.S. Patent Application Serial Number 10/378,458 filed March 3, 2003, the entire content of which is incorporated herein by reference. One or more antennas may be positioned within open shelf 12A to create an electromagnetic field for communicating with the RFID tags associated with the articles stored therein. Similarly, antennas may be located within cabinet 12B, vertical file separator 12C, desktop reader ~~1812D~~, and or other location. The antennas may be positioned in various ways, such as on top or bottom of each shelf, at the back of the shelves, or supported vertically, interspersed among the files. The antennas can be retrofitted to existing shelves or built into a shelf and purchased as a unit. The system may be configured to interrogate, or poll, the RFID tags in any number of ways. For example, the antennas may poll the RFID tags continuously, poll the tags in a sequence specified by the user, or poll the tags on demand.

[0037] In contrast, RFID system 10 utilizes "compensated RFID tags" that incorporate compensating elements 30. Compensated RFID tags are useful, for example, where it may be desirable to read a group of RFID tags that are in close proximity to each other. For example, RFID tags attached to file folders or books may be in close proximity to other RFID tags when the articles containing the tags are stored on a shelf or in a drawer, or carried through an exit control system. The compensated RFID tags are designed such that each compensated RFID tag may ~~may~~ be read individually as well as when it is in close proximity to other RFID tags, regardless of whether the other RFID tags are similarly compensated, differently compensated, or uncompensated.

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[0073] Two different types of compensating elements 30 have thus been described. One type is that described with respect to FIGS. 2-6, in which the compensating element 30 is formed as [[a]] physically separate from the RFID antenna 24. This physically separate, compensating element 30 can be electrically connected or electrically isolated (i.e., not connected) to the RFID antenna 24. Another type is like that described above with respect to FIG. 17, in which physical coils, or loops, of the antenna 24 itself are shorted to other coils or loops of the antenna 24 to form a compensating element 30. Each coil or loop forming a continuous loop compensating element 30 is connected at a single point of electrical contact with a coil or loop of the antenna 24. The selection of the type of compensating element 30, namely, whether formed as a physically separate element or formed as part of the RFID tag antenna itself, may depend upon the specific application for which the RFID tags are to be used, the desired resonant frequency of the compensated RFID tags, the manufacturing techniques used to produce the RFID tags, and whether the compensating element 30 is to be built into the RFID tag at manufacture or added onto pre-existing, uncompensated RFID tags in the manner discussed above with respect to FIG. 10.